

Building Site Development
McLean County, North Dakota

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The following tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slight indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Moderate indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Severe indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Building Site Development--Continued
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Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ac: Aquents-----	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: frost action low strength	Moderate: excess salt wetness
Af: Aquolls-----	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
ArA: Arnegard-----	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell	Severe: low strength	Slight
ArB: Arnegard-----	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Severe: low strength	Slight
ArC: Arnegard-----	Slight	Moderate: shrink-swell	Slight	Moderate: shrink-swell slope	Severe: low strength	Slight
Ba: Banks-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding droughty
Bk: Banks-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding droughty
BoA: Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
BsB: Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
BwA: Bowdle-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
ByB: Bowdle-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
Stady-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
ByC: Bowdle-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
Stady-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
CaE: Cabba-----	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
CbF: Cabba-----	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock

Building Site Development--Continued
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Shale Outcrop-----	Severe: slope depth to rock	Severe: shrink-swell slope	Severe: shrink-swell slope depth to rock	Severe: shrink-swell slope	Severe: low strength shrink-swell slope	Severe: slope depth to rock droughty
CF: Cut And Fill Land-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
ChD: Cohagen-----	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Severe: depth to rock
Vebar-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: area reclaim slope thin layer
ChE: Cohagen-----	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Vebar-----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Co: Colvin-----	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding low strength wetness	Severe: flooding wetness
Dm: Dimmick-----	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
Dv: Divide-----	Severe: cutbanks cave	Slight	Moderate: wetness	Slight	Moderate: frost action	Slight
FaA: Falkirk-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Slight	Moderate: frost action	Slight
FaB: Falkirk-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Moderate: slope	Moderate: frost action	Slight
FbA: Falkirk-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Slight	Moderate: frost action	Slight
Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: low strength shrink-swell	Slight
FbB: Falkirk-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Moderate: slope	Moderate: frost action	Slight
Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
FbC: Falkirk-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Moderate: slope	Moderate: frost action	Slight
Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight

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FfA: Farnuf-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
FfB: Farnuf-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
FfD: Flasher-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: area reclaim thin layer
FfE: Flasher-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: area reclaim slope thin layer
FnA: Flaxton-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
FnB: Flaxton-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
FnC: Flaxton-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Fs: Fossum-----	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
GaA: Grail-----	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
GaB: Grail-----	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Gn: Grano-----	Severe: ponding cutbanks cave	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: too clayey ponding
GoA: Grassna-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: low strength	Slight
GP: Gravel Pits-----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope small stones droughty
HaA: Hamerly-----	Severe: wetness	Moderate: shrink-swell wetness	Severe: wetness	Moderate: shrink-swell wetness	Severe: frost action	Slight
Hk: Harriet-----	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding low strength wetness	Severe: excess sodium wetness

Building Site Development--Continued
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Saline Land-----	Severe: ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action low strength ponding	Severe: excess salt ponding
Hn: Havrelon-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding low strength	Moderate: flooding
Ho: Havrelon-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding low strength	Moderate: flooding
Hs: Heil-----	Severe: ponding cutbanks cave	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: excess sodium ponding
IL: Intermittent Lake-----	---	---	---	---	---	---
KrB: Krem-----	Severe: cutbanks cave	Slight	Moderate: shrink-swell	Slight	Moderate: frost action	Slight
La: Lallie-----	Severe: wetness	Severe: flooding shrink-swell wetness	Severe: flooding shrink-swell wetness	Severe: flooding shrink-swell wetness	Severe: low strength shrink-swell wetness	Severe: flooding too clayey wetness
LaK: Lake-----	---	---	---	---	---	---
LeB: Lihen-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
LeC: Lihen-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
LgE: Lihen-----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Zahl-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
LmB: Linton-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Mandan-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
LmC: Linton-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Mandan-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
LmD: Linton-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
Mandan-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope

Building Site Development--Continued
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LmE: Linton-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Mandan-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Lw: Lohler-----	Moderate: flooding too clayey wetness	Severe: flooding shrink-swell	Severe: flooding shrink-swell	Severe: flooding shrink-swell	Severe: flooding low strength shrink-swell	Moderate: flooding
Ly: Lohler-----	Moderate: flooding too clayey wetness	Severe: flooding shrink-swell	Severe: flooding shrink-swell	Severe: flooding shrink-swell	Severe: flooding low strength shrink-swell	Severe: too clayey
Ma: Makoti-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: low strength	Slight
MdA: Mandan-----	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
MdB: Mandan-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
MdC: Mandan-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Mf: Marysland-----	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
MgB: Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
MhC: Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Zahl-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
MLC: Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
Zahl-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Mld: Max-----	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
Zahl-----	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope

Building Site Development--Continued
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MoC: Morton-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Moderate: area reclaim thin layer
NbA: Niobell-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Moderate: frost action low strength shrink-swell	Severe: excess sodium
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
NbB: Niobell-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell slope	Moderate: frost action low strength shrink-swell	Severe: excess sodium
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
NmB: Noonan-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: low strength	Severe: excess sodium
Miranda-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell	Severe: low strength	Severe: excess sodium
NmD: Noonan-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
Miranda-----	Moderate: wetness	Moderate: shrink-swell	Moderate: shrink-swell wetness	Moderate: shrink-swell slope	Severe: low strength	Severe: excess sodium
NtA: Nutley-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: too clayey
NtB: Nutley-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: too clayey
Or: Orthents-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Pa: Parnell-----	Severe: excess humus ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
Pe: Parnell-----	Severe: excess humus ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
PhA: Parshall-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
PhB: Parshall-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight

Building Site Development--Continued
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PhC: Parshall-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
PhD: Parshall-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
PoA: Parshall-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
PoB: Parshall-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
RgC: Regent-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Moderate: thin layer
RhB: Rhoades-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: excess sodium
Rm: Riverwash-----	Severe: wetness cutbanks cave	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness droughty
Ro: Roseglen-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
RpB: Roseglen-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Tansem-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action low strength	Slight
RpC: Roseglen-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Tansem-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action low strength	Slight
RsA: Ruso-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
RtB: Ruso-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Manning-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
RtC: Ruso-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Manning-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
RxB: Ruso-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty

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Manning-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
RyC: Ruso-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Wabek-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
RzA: Ruso-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
SeD: Seroco-----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Sn: Sinai-----	Severe: cutbanks cave	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: low strength shrink-swell	Severe: too clayey
St: Straw-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding frost action	Slight
Sx: Straw-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
Straw, CHANNELED-----	---	---	---	---	---	---
TlC: Telfer-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Lihen-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Tp: Tonka-----	Severe: ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
Parnell-----	Severe: excess humus ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
Tr: Trembles-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
VwC: Vebar-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: area reclaim thin layer
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
W: Water (water Areas >40 Acres-----	---	---	---	---	---	---
WaB: Wabek-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
Zahl-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight

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Max-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
WaD: Wabek-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
Zahl-----	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low strength	Moderate: slope
Max-----	Moderate: slope	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low strength shrink-swell slope	Moderate: slope
WbB: Wabek-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
WbD: Wabek-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
WlB: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Moderate: large stones
WmA: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
WmB: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
WoA: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
WoB: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
WoC: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
WpB: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Bowbells-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight

Building Site Development--Continued
McLean County, North Dakota

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Zahl-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
WrB: Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Sinkhole-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
WSA: Wilton-----	Slight	Slight	Moderate: shrink-swell	Slight	Moderate: frost action low strength	Slight
WtB: Wilton-----	Slight	Slight	Moderate: shrink-swell	Moderate: slope	Moderate: frost action low strength	Slight
Temvik-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Moderate: low strength shrink-swell	Slight
WwC: Wilton-----	Slight	Slight	Moderate: shrink-swell	Moderate: slope	Moderate: frost action low strength	Slight
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
ZcE: Zahl-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Cabba-----	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
ZmE: Zahl-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Max-----	Severe: slope	Severe: slope				
ZpE: Max-----	Severe: slope	Severe: slope				
Zahl-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength slope	Severe: slope
Parnell-----	Severe: excess humus ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: shrink-swell ponding	Severe: low strength shrink-swell ponding	Severe: ponding
ZwC: Zahl-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight
Williams-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell slope	Severe: low strength	Slight

